

LAKE ILO REFUGE.

I. GENERAL.

A. Weather Conditions.

Precipitation was near normal at Lake Ilo Refuge during the report period. The temperature averaged above normal during September and October. November and the first half of December were below normal while the last of December took another turn and above average temperatures prevailed. It is estimated that 5 inches of snow covers the ground at the end of the period.

Weather data for the past four months are as follows:

<u>Month</u>	<u>Precipitation</u>	<u>Snowfall</u>	<u>Max.Temp.</u>	<u>Min.Temp.</u>
September	1.39	2"	98	26
October	.79	0	78	21
November	.36	7	65	-21
December	.55	6	39	-31
Total	4.09	15" Extremes	98	-31

B. Water Conditions.

The water elevation was 11" below spillway crest on September 1 and the ice level on December 31, was 17" below the spillway or a total drop of 6" was recorded. The entire lake was completely frozen over by November 8, which is the earliest freeze-up on record. The date of freeze-up in 1949 was December 5 and that was remembered as an unusual early freeze. The ice was measured on December 1, 1950 and found to be 8" in thickness. A re-check on December 31 revealed the ice to be 16". The end of the period water level was above average.

C. Fires. None.

II. WILDLIFE.

A. Migratory Birds.

Approximately 10,000 ducks were present in the refuge on Sept. 1 and by Oct. 1, the number had increased to 20,000. The peak concentration was reached during the latter part of October and early November. At this time an estimated 60,000 ducks were using the refuge. The total estimate is below the average figure for the past years. Approximately 1,000 Canada, white-fronted and snow geese used the area during fall migration.

The large concentrations of ducks were present in variable numbers until the freeze-up of November 8 which forced the majority of them on south. However, considerable numbers remained several days longer keeping small open water areas free of ice and feeding in nearby fields.

These soon decided that the warmer climate and better feeding was more attractive than the continuation of winter conditions. After we were sure all ducks had left us, approximately 6,000 mallards dropped in for a few days rest on November 20. No ducks were observed after Nov. 25.

Shore bird migration was smaller than in 1949 and probably due to the higher water levels offering less attraction than in former years. Fifty white pelicans could be seen regularly during September and Oct.

B. Upland Game Birds.

The cold late spring resulted in an extremely late nesting season for upland game birds and was held responsible for the late appearance of broods. Early in Sept., the refuge was supporting an estimated 200 pheasants. During early November when the pheasant season was open, a definite influx of birds was noted. At the close of the period, we have a pheasant population of about 350 birds.

Very few sharp-tailed grouse have been seen within or near the refuge. The European Partridge have shown an increase over last year. Observations indicate that approximately 100 "Huns" are present as compared to 30 for the same period of a year ago.

Upland game food appears to be abundant. Heavy snow covering waste grain for long periods will undoubtedly work a hardship on pheasants. The other bud eating species should winter in good condition.

All crops were fair and small grain was considered good. Very little corn matured in this vicinity due to the early frost in August.

C. Big Game Animals.

No big game animals were observed on the refuge during the period. There was a good population of white-tailed and mule deer in the vicinity where more attractive environment was afforded as was evidenced by the good hunting success during the open season.

D. Fur Animals, Predators, Rodents and other Mammals.

In comparison with previous years, the muskrat population is very low. No permits were issued until after the limited "rat" season declared by the State was closed and, therefore, none will be removed this year. Mink signs indicate the population to be similar to 1949, and a permit has been issued to remove an unlimited number. Only a few weasel signs have been seen, but appear to be more than last year. Their numbers are still small. No fox or coyote have been seen during the period. The operation of 1080 stations and plane hunting by Predator and Rodent Control have reduced these animals to the point where very few remain in this area.

The destruction to trees by beaver common one year ago has not

re-occurred. No removal of this rodent is necessary. Skunks and badgers are not present in alarming numbers, but trapping permittees will be encouraged to remove these animals when possible.

E. Predacious Birds, including Crows, Ravens, Magpies.

Golden eagle appeared early in the fall and several have been present in and in the vicinity of the refuge during the report period. Upon a few occasions, these birds have been seen feeding on pheasants. It is believed that some farmers have killed eagles as a protective measure for pheasants. No definite evidence has been obtained, however.

Prairie falcons have been observed, but in numbers below last year. This may be due to the fact that no ducks are attempting to winter on the area this winter.

F. Fish.

Fishing success on Lake Ilo was considered good during the regular season from May 16 to Sept. 16. Success during the winter season of December 1 to March 15 has been very good. The daily catches have been made up of mostly perch with a few crappies. Throughout the year the take of perch have exceeded the yearly average while crappies have dropped off considerably. The year's take of the latter was only approximately 10% of usual catch.

As an example to this winter's fishing success, two anglers were observed near headquarters on December 20. They started fishing at 8:00 A.M. and by 1:00 P.M. had taken 244 perch and one crappie. During favorable weather conditions 20 to 30 cars of fishermen are present on the lake each day.

III. REFUGE DEVELOPMENT-MAINTENANCE

A. Physical Developments.

1. Placed small granary 10'x10' on foundation at headquarters and repaired it so as to hold grain. Installed wind braces.
2. Hauled refuge share of grain and stored in granary at hqtrs.
3. Serviced and performed minor repair on trucks, pickup and other equipment used on Ilo spillway repair - tractor, pump & mixer.
4. Checked and repaired refuge markers.
5. Installed new concrete top on septic tank. Installed tile drain in septic tank to disposal field. Made disposal field for sewer system at headquarters by digging pit 8' x 4' x 16' deep and placing two sets of 2' concrete culverts 11' high in pit and filled around culverts with gravel. This job is 80% completed.
6. Lake Ilo spillway repair. - Two new walls were built, one on each side of spillway below slope - 34' long and 12 ft. high, floor

7' wide, 15" thick and 4 buttresses 16" wide against each wall. Approximately 70 cu. yards of concrete were used on this job.

Work on Spillway itemized:

1. 104 cu. yds. of sand and gravel hauled on government-owned truck a distance of 45 miles from refuge.
2. 7,000' of 5/8" steel hauled from Minot, N.Dak. 140 miles.
3. 400 sacks of cement hauled from Dunn Center, N.D. 2 $\frac{1}{2}$ mi.
4. Concrete mixer and front-end tractor loader from Des Laos to Lake Ilo and return.
5. Moved approximately 100 cu. yds. of dirt with front end tractor loader.
6. Pumped water 50 days with 3" centrifugal pump, 10 days with 2" centrifugal pump, an average of 2 hrs. per day.
7. Built and placed forms.
8. Built shelter to cover walls and heated concrete for 7 days after it was poured.
9. Heated sand and gravel before it was poured.
10. Hauled form lumber from Dunn Center and returned it.
11. Drilled 80 holes in old concrete to place 3/4" dawl pin in. Electric Jack hammer was used.
12. Hauled two loads of wood from Des Laos for heating sand and gravel. Also hauled two loads of coal from local mine for heating.

B. Plantings.

No crops were planted by refuge personnel. Sixty two acres of wheat, corn and barley were planted this season under cooperative agreement. Part of the refuge share was left standing for wildlife food. Three acres barley and two acres of wheat were harvested for refuge emergency wildlife feeding. Refuge wheat averaged 20 bu. and barley 35 bu. per acre.

IV. ECONOMIC USE.

A. Grazing.

Two grazing permits were issued this year.

B. Haying.

Four haying permits were issued to neighboring farmers.

C. Fur Harvest.

A complete report of furs harvested will be included in the Jan.-April, 1951 narrative report.

VI. PUBLIC RELATIONS.

A. Recreational Uses.

The recreational area which is under the management of the Dunn County Park Board was maintained in good order. 1228 trees were planted last spring and they were cultivated several times during the year. They appear to have done well. The public used the area a great deal during the summer months for picnicking and public gatherings. 12,000 wall-eyed pike were planted in Lake Ilo.

B. Fishing.

See Section II F, Fish.

EASEMENT REFUGES - DISTRICT IV

HIDDENWOOD

I. GENERAL.

Water level was above average for this period as a result of ample fall precipitation. Heavy use of the area was apparent from observations made on inspection and waterfowl censusing visits.

II. WILDLIFE.

When the area was visited on October 27, 1950, 500 ducks were still present, the majority of which were mallards. According to local opinion this figure had been much higher and some depredation, although insignificant, occurred. Fair duck hunting was had by local hunters in the vicinity and no trespassing for hunting purposes was reported. More than ample aquatic and upland cover was noted and good food sources for all species present were in abundance.

Muskrat and badger appeared to be the most common of fur-bearers. Considerable digging by the latter was noted and some "rat" house building activity was underway. Minks are reported to be in numbers similar to last year. Two trapping permits were issued to neighboring farmers.

III. PHYSICAL DEVELOPMENTS.

1. Migratory waterfowl count.
2. Checked and repaired refuge markers.

LAKE PATRICIA

I. GENERAL.

Precipitation received during the period was about normal as was the water level for this area. The boundaries are now well marked by signs of the State Game & Fish Department.

II. WILDLIFE.

A check of the waterfowl using the area was made on October 31. At this time an estimated 20,000 ducks, 90% of which were mallards, were resting on the lake.

III. PHYSICAL DEVELOPMENTS.

None.

LEGION LAKE

I. GENERAL.

This area is located in one of the few sections of North Dakota where below average precipitation was received. On October 27, 1950 the water level was below spillway crest by 3 feet. More extensive re-posting than was accomplished during the short visits is necessary. The entire area is heavily utilized from the farming standpoint down to the waters edge and thus little cover remains.

II. WILDLIFE.

The high population of ducks for most all easements did not hold true for this refuge. Total ducks recorded are as follows: 300 mallards, 100 canvas back, 50 scaup and 100 pintails. No complaints of duck depredation were received or discovered. Hunting success was reported to be poor by local interested sportsmen.

There were no upland game birds observed and few are expected to be using the area under the overgrazed and farmed conditions.

Muskrats signs indicate a very scarce population and very few signs of any other fur-bearer could be discovered. One permit was issued to local farm boys. The harvest of fur on the area is anticipated to be very light.

III. PHYSICAL DEVELOPMENTS.

1. Fur-bearing animal, upland birds and migratory waterfowl censusing.
2. Limited repair and replacement of boundary markers.
3. Discussion of depredation and hunting violations with local farmers and sportsmen.

McLEAN

I. GENERAL.

Precipitation in the form of rain and snowfall was about normal. Water level averaged approximately one foot below spillway crest throughout the four month period. Boundary markers were in good condition needing very little repair work. The Oct. 27, inspection revealed the dam and spillway to be holding up in good condition.

II. WILDLIFE.

The majority of the 300 mallards and 200 pintails present during late Oct. preferred the northern end of the lake where ideal cover was available. One indirect report from a near-by farmer that severe depredation was encountered in at least one area. Considerably more ducks were reported to have used the refuge at other intervals.

Upland game birds were observed to be few and far between. The pheasant population remains low, sharp-tailed grouse about the same and a slight increase for European Partridge.

The fur-bearers here are again not too plentiful; this is especially true for muskrats. One permit has been issued to a neighboring farmer. The take is expected to be small.

III. PHYSICAL DEVELOPMENTS.

1. Markers checked and repaired as necessary.
2. Periodic inspections and wildlife censusing.
3. Discussion on depredation and hunting laws with local farmers and sportsmen.

PRETTY ROCK

I. GENERAL.

Moisture received for the period was about average. Water level was about one foot below spillway crest on Oct. 30. Fair crops were harvested in this locality and some loss was reported from duck's feeding out. Hunting pressure was light and only fair success reported. The usual complaint of mallards staying within the boundaries until after shooting hours was heard from several sportsmen. Boundary markers were in good condition and only minor repair work needed.

II. WILDLIFE.

On October 30, there were an estimated 4500 mallards present on the area. No other species were observed at this time. According to local opinions this number of mallards represented about one half of the total on hand one week earlier. Some minor depredation was reported, but no complaints of severe damage were received.

The ring-necked pheasant was the only representative of upland game species observed. Undoubtedly there are a limited number of sharp-tailed grouse and European partridge using the refuge. The number of pheasants observed and the hunting success reported during the open season indicate the population to be a little above the 1949 figure.

Few signs of muskrat, mink and other fur-bearers were observed. One trapping permit was issued to a farmer's boy who lives on the area. No muskrat will be taken, however, as the State closed all Federal and State Easement refuges to the taking of muskrats during the 1950 thirty day season.

III. PHYSICAL DEVELOPMENTS.

1. Inspection and wildlife censusing.

2. Repaired boundary markers.
3. Repair to spillway as follows:
 - a. 193 man-hours labor.
 - b. 7 cu. yards sand.
 - c. Rented cement mixer and returned same.
 - d. Hauled lumber and cement for job.
 - e. Filled in washout below spillway.

STEWART LAKE

I. GENERAL.

Precipitation was below normal during the period. The water-level was an estimated two feet below the spillway and the water line approximately 400 yds. from outlet. The low water condition is most satisfactory as the damage to this spillway from former run-offs was not prepared prior to freeze-up. We are hoping for very little over flow this next spring and thus additional damage. It is planned to repair this spillway next spring or summer.

Signs are in fair condition with some work needed to replace those which are badly shot up. Extremely heavy grazing over most of the area has deprived upland birds of all cover. Only limited aquatic cover is present in the shallows of the upper part of the lake.

II. WILDLIFE.

Ninety five percent of the estimated 10,000 ducks present the latter part of October consisted of mallards and the remainder were pintails. Fair hunting was reported in the vicinity by duck hunters. We were rather surprised to not find any complaints of duck depredation. The ducks were feeding in fields, so farmers were either unaware of it or did not resent a few bu. being taken. Of course, the big factor was that harvest of grain was not retarded as in other areas by rain.

Upland game bird populations remained similar to last year with possible a slight increase in pheasants. The number using the refuge increased during the hunting season. However, the influx was not too great due to the low hunting pressure in this particular area.

Muskrats are down from last year while mink signs indicate an increase. Other fur-bearers remain about the same. One permit was issued to farm boys living on the refuge. As in the case for all easements, muskrat trapping was closed by State Proclamation.

III. PHYSICAL DEVELOPMENTS.

1. Inspection and wildlife censusing.
2. Repaired boundary markers.

WHITE LAKEI. GENERAL.

Precipitation received for the period was below normal. Water level was 18" below spillway crest on Oct. 30. A grass fire occurred in the north west corner burning about 14 acres along the highway. The fire had been brought under control by neighboring farmers. Fair crops were harvested in this vicinity.

II. WILDLIFE.

10,000 mallards and 500 pintails were present during the latter part of October. Upland game birds remain scarce on this area. No species were observed, but according to reports a limited number of pheasants, sharp-tails and European partridge are seen upon occasions. Pheasants are in greater numbers than the other two species.

Fur-bearing animals remain about the same as in former years with the exception of muskrats. One trapping permit was issued to a farmer living in the refuge.

III. PHYSICAL DEVELOPMENTS.

1. Inspection and wildlife censusing.

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NOTE: Much of the data for Lake Ilo and District IV Easements was supplied by Mr. Chesley M. Dinkins, Maint. Man (General) who is stationed at Lake Ilo Refuge.

WATERFOWL

REFUGE

Lake Ile

MONTHS OF

A.

to

Dec.

19 50

(1) Species	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u>									
Whistling swan	None observed								
2. <u>Geese:</u>									
Canada goose	24	10/18	200	10/20-11/10					300
Cackling goose	None observed								
Brant	None observed								
White-fronted goose	150	9/29	500	10/20-11/10					750
Snow goose	21	10/14	50	10/20-30					100
Blue goose	None observed								
3. <u>Ducks:</u>									
Mallard			50,000	11/1-20					70,000
Black Duck	None observed								
Gadwall			200	10/1-20	10/1-20				400
Baldpate			500	9/25-10/10					800
Pintail			4,000	9/10-30					8,000
Green-winged teal			25	8/20-9/10					25
Blue-winged teal			1,000	8/20-9/10					2,000
Cinnamon teal	None observed								
Shoveller			600	9/20-30					800
Wood duck	None observed								
Redhead	50	10/14	200	10/20-30					300
Ring-necked duck	None observed								
Canvas-back	70	10/14	200	10/20-30					400
Scaup			2,000	10/30-11/10					2,000
Golden-eye			20	9/20-30					20
Buffle-head			20	9/20-30					20
Ruddy duck			50	9/20-30					50
4. <u>Coot:</u>									
			2,000	8/30-9/20					4,000

Form NR-1

(June 1949)

(over)

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period **89,965**

Peak waterfowl numbers **61,565**

Areas used by concentrations **Entire area**

Principal nesting areas this season _____

Reported by **Charles M. Dickinson**
Maintenance Man (General)

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Hiddenwood Months of Sept. to Dec. 194 50

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>		None observed								
Whistling swan										
II. <u>Geese:</u>		None observed								
Canada goose										
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard				5,000	10/20-11/7					6,000
Black duck		None observed								
Gadwall				50	10/1-15					50
Baldpate				75	10/1-15					75
Pintail				500	10/15-31					600
Green-winged teal				20	10/15-31					50
Blue-winged teal				200	10/1-15					300
Cinnamon teal		None observed								
Shoveller				50	10/15-31					50
Wood duck		None observed								
Redhead				50	10/15-31					50
Ring-necked duck		None observed								
Canvas-back				150	10/1-15					300
Scaup				200	10/16-31					300
Golden-eye		None observed								
Buffle-head				20	10/1-15					50
Ruddy duck				100	10/1-15					100
IV. <u>Coot:</u>				200	10/1-15					400

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 8,155

Peak waterfowl numbers 6,615

Areas used by concentrations Entire water area

Principal nesting areas this season _____

Reported by Claude R. Alexander
Refuge Manager

INSTRUCTIONS

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- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

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WATERFOWL

Refuge Lake Patricia Months of Sept. to Dec. 1945

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan	None observed								
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose			100	10/15-30					100
III. <u>Ducks:</u> Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck			20,000	10/20-11/7					20,000
	None observed		200	10/1-15					500
			400	10/1-15					500
			1,000	10/15-30					1,200
			100	10/1-15					100
			500	10/1-15					700
	None observed								
			100	10/1-15					125
	None observed								
	"	"							
	"	"							
	"	"							
	"	"							
	"	"							
	"	"							
	"	"							
IV. <u>Coot:</u>			900	10/1-15					1,000

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 34,025

Peak waterfowl numbers 24,800

Areas used by concentrations All of water area

Principal nesting areas this season _____

Reported by Claude R. Alexander
Refuge Manager

INSTRUCTIONS

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- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
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WATERFOWL

Refuge Legion Lake Months of Sept. to Dec. 19450

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan	None observed								
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose	None observed								
III. <u>Ducks:</u> Mallard			15,000	10/20-11/7					20,000
Black duck	None observed								
Gadwall			100	10/1-15					150
Baldpate			200	10/1-15					300
Pintail			900	10/1-15					700
Green-winged teal			100	10/1-15					100
Blue-winged teal			300	9/20-10/5					400
Cinnamon teal	None observed								
Shoveller			50	10/1-15					50
Wood duck	None observed								
Redhead	None observed								
Ring-necked duck	None observed								
Canvas-back			300	10/1-15					400
Scaup			300	10/15-50					400
Golden-eye	None observed								
Buffle-head			20	10/1-15					20
Ruddy duck			100	10/1-15					150
IV. <u>Coots:</u>			400	9/20-10/5					600

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 23,270

Peak waterfowl numbers 17,570

Areas used by concentrations Entire water area

Principal nesting areas this season _____

Reported by Claude R. Alexander
Refuge Manager

INSTRUCTIONS

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- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

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WATERFOWL

Refuge McLean Months of Sept. to Dec. 1946

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>		None observed								
Whistling swan										
II. <u>Geese:</u>		None observed								
Canada goose										
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard				5,000	10/20-11/7					6,000
Black duck		None observed								
Gadwall				100	10/1-15					100
Baldpate				200	10/1-15					200
Pintail				500	10/1-15					600
Green-winged teal				50	10/1-15					50
Blue-winged teal				300	9/20-10/1					400
Cinnamon teal		None observed								
Shoveller				50	9/20-30					50
Wood duck		None observed								
Redhead		None observed								
Ring-necked duck		None observed								
Canvas-back				100	10/1-15					100
Scaup		None observed								
Golden-eye		"	"							
Buffle-head		"	"							
Ruddy duck				100	9/20-30					100
IV. <u>Coots:</u>				300	9/20-30					400

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 8,000

Peak waterfowl numbers 6,700

Areas used by concentrations Entire water area

Principal nesting areas this season _____

Reported by Claude R. Alexander
Refuge Manager

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Pretty Rock Months of Sept. to Dec. 194/50

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date -	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>		None observed								
Whistling swan										
II. <u>Geese:</u>										
Canada goose				50	10/10-20					50
Cackling goose										
Brant										
White-fronted goose				100	10/10-20					100
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard				10,000	10/20-11/10					12,000
Black duck		None observed								
Gadwall				150	10/1-15					200
Baldpate				300	10/1-15					300
Pintail				1,500	10/1-15					2,000
Green-winged teal		None observed								
Blue-winged teal				500	9/20-30					800
Cinnamon teal		None observed								
Shoveller				100	10/1-15					150
Wood duck		None observed								
Redhead		None observed								
Ring-necked duck		None observed								
Canvas-back				100	10/1-15					150
Scaup				500	10/15-31					500
Golden-eye		None observed								
Buffle-head		None observed								
Ruddy duck				200	10/1-15					250
IV. <u>Coots:</u>				300	10/1-15					500

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 17,000

Peak waterfowl numbers 13,800

Areas used by concentrations Entire water area

Principal nesting areas this season _____

Reported by Claudia R. Alexander
Refuge Manager

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Stewart Lake Months of Sept. to Dec. 1950

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>		None observed								
Whistling swan										
II. <u>Geese:</u>		None observed								
Canada goose										
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard				20,000	10/20-11/10					30,000
Black duck		None observed								
Gadwall				200	10/1-15					200
Baldpate				400	10/1-15					400
Pintail				2,000	10/1-15					2,500
Green-winged teal				50	10/1-15					50
Blue-winged teal				500	10/1-15					600
Cinnamon teal		None observed								
Shoveller				100	10/1-15					150
Wood duck		None observed								
Redhead				50	10/15-30					50
Ring-necked duck		None observed								
Canvas-back				200	10/15-31					200
Scaup				500	10/20-11/10					500
Golden-eye		None observed								
Buffle-head		None observed								
Ruddy duck				150	10/1-15					200
IV. <u>Coots:</u>				150	10/1-15					300

3-1750
(July 1946)

(over)

Form NR-1

51

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 24,250

Peak waterfowl numbers 18,000

Areas used by concentrations Entire water area

Principal nesting areas this season _____

Reported by Claude R. Alexander

Refuge Manager

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge White Lake Months of Sept. to Dec. 1946

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>	None observed								
Whistling swan									
II. <u>Geese:</u>	None observed								
Canada goose									
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. <u>Ducks:</u>									
Mallard			15,000	10/20-11/10					20,000
Black duck	None observed								
Gadwall			100	10/1-15					100
Baldpate			200	10/1-15					300
Pintail			1,000	10/1-15					1,500
Green-winged teal			100	10/1-15					100
Blue-winged teal			500	9/20-30					800
Cinnamon teal	None observed								
Shoveller			100	10/1-15					200
Wood duck	None observed								
Redhead	None observed								
Ring-necked duck	None observed								
Canvas-back			200	10/1-15					250
Scaup			500	10/15-31					500
Golden-eye	None observed								
Buffle-head	None observed								
Ruddy duck	None observed								
IV. <u>Coot:</u>			300	10/1-15					500

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 24,250

Peak waterfowl numbers 18,000

Areas used by concentrations Entire water area

Principal nesting areas this season _____

Reported by Claude E. Alexander
Refuge Manager

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Lake Ilo Months of Sept. to Dec. 1945

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Common Loon			3	9/15-30						3
Western Grebe			10	"						20
White Pelican			140	9/20-30						200
Double-Crested Cormorant			20	"						30
Great Blue Heron			20	"						30
American Bittern			20	9/10-20						40
Sand Hill Crane			1200	10/10-20						2000
Eared Grebe			200	9/10-30						200
II. Shorebirds, Gulls and Terns:										
Terns:										
Killdeer			100	9/10-30						100
Greater Yellow-legs			200	"						300
Lesser Yellow-legs			300	"						400
Sand Piper			50	"						50
Dowitcher			50	"						50
Avocet			50	"						50
Wilson Snipe			100	10/20-30						100
Gulls			1000	9/10-30						2000
Marbled Godwit			20	"						20
Wilson's Phalarope			200	"						200
Willet			20	"						30
Black Tern										400
Common Tern										500

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove		20	9/1-20		20
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle	1	9/20	4	12/20-30	4
Duck hawk	1	9/20	4	10/20-30	4
Horned owl	1	10/20	1	10/20-30	1
Magpie	None seen.				
Raven					
Crow	Common.		300	9/10-30	600
Snowy Owl	1	12/1	4	12/1-30	8
Swainson's Hawk			4	9/10-30	4
Am. Rough Legged Hawk			5	9/10-30	5 1/2
Marsh Hawk			15	9/10-30	15 2
Prairie Falcon			2	12/10-30	2 1/2
Sparrow Hawk			10	9/10-30	10
Reported by <u>Chesley M. Dinkins</u> Maint. Man (Gen.)					

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

UPLAND GAME BIRDS

1613

Refuge Lake Ilo & District IV Reservoirs Months of September to December, 1945
Refuges

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
<u>LAKE ILO</u>					1-M; 2-FM					
Pheasant									350	The short season on pheasant saved a large number of birds. Hunting pressure was not as heavy as usual.
Sharp-tailed Grouse									10	
Hung. Partridge									100	
<u>HIDDENWOOD</u>										
Pheasant									60	
Sharp-tailed Grouse									20	
Hung. Partridge									40	
<u>LAKE PATRICIA</u>										
Pheasant									200	
Sharp-tailed Grouse									25	
Hung. Partridge									50	
<u>LEGION LAKE</u>										
Pheasant									40	
Sharp-tailed Grouse									20	
Hung. Partridge									30	
<u>MOLEAN</u>										
Pheasant									5	
Sharp-tailed Grouse									20	
Hung. Partridge									40	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

UPLAND GAME BIRDS

1613

Refuge Lake Ilo & District IV Easement
Refuges

Months of September to December, 1945

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
<u>PRETTY ROCK</u>										
Pheasants									100	
Sharp-tailed Grouse									10	
Hung. Partridge									50	
<u>STEWART LAKE</u>										
Pheasant									150	
Sharp-tailed Grouse									100	
Hung. Partridge									100	
<u>WHITE LAKE</u>										
Pheasant									60	
Sharp-tailed Grouse									20	
Hung. Partridge									40	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

Refuge

~~Eschscholtz Refuge~~ District IVYear 194 50

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
Hidden Hiddenwood		None		None		None		None
Lake McLean		None		None		None		None
Lake Patricia		None		None		None		None
Legion Lake	Bullheads	None		None		None		None
	Suckers	None		None		None		None
Pretty Rock	Bullheads	None		None		None		None
	Suckers-Carp	None		None		None		None
Stewart Lake								
Perch	Common	160	200	None		None		None
Catfish	Common		200	None		None		None
Bullheads	Abundant		200	None		None		None
Suckers	Abundant		300	None		None		None
White Lake								
Bullheads	Abundant	175	200	None		None		None
Suckers	Abundant		200	None		None		None

REMARKS:

FISH

Refuge Lake Ilo Refuge Year 1946

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
Large Mouth Bass	Common		1,000					
Bluegills	Common		4,000					
Crappies	Common		1,200					
Perch	Abundant		30,000					
Bullheads	Abundant		1,000					
Walleye Pike	Common		400			12,000	Lake Ilo	
Suckers	Abundant		few					
Carp	Have been showing up in shallow water for two years							
Catfish	Common		50					

REMARKS: Total of 3,000 man days fishing. The Crappie fishing was very poor this season compared with other years. The Perch fishing was very good but the fish run smaller than in the past. It is believed that the Perch are beginning to outnumber the other fish, especially the Crappie. The Catfish and the Bullheads seem to be disappearing as the ones that are caught are all of a relatively large size. The presence of the Carp in the shallow waters is very noticeable from the air by the areas of muddy water. There were 15,000 Walleye Pike stocked 3 years ago and 12,000 stocked this year.

CULTIVATED CROPS

Refuge Lake Isle Year 1950

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested		Unharvested		
							Acres	Bu.	Acres	Bu.	
Tom Demance	18707	AU 1, 2	Corn Wheat	8 20	-- 12	-- 240	-- --	-- --	8 --	80 --	25 acres summer fallow
Charles Schollmeyer	18708	AU 4, 5	Barley Wheat	35 20	12 18	420 360	3 2	105 40	5 --	175 --	

Summary of Crops Grown:	Crop	Acreage	Permittee's Share		Government's Share		Total Revenue	
			Acres	Bushels	Harvested Acres	Bu.	Unharvested Acres	Bu.
	Wheat	32	30	600	2	40	--	--
	Barley	20	12	420	3	105	5	175
	Corn	--	--	--	--	--	8	80

Interior Duplicating
Section, Wash.D.C.

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

HAYING AND GRAZING

Refuge Lake Ilo Refuge, Dunn Center, N. Dak. Year 194 50

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To		Rate	Total Income	Remarks
<u>HAYING</u>										
Tom Donohoe	31	HU-1,2,3	60		61.06	7/15	- 11/15	1.00	61.06	
Grover Odren	32	HU-6, 7	20		18.0	"	"	1.00	18.00	
G. W. Searles	30	HU-5	30		29.0	"	"	1.00	29.00	
Charles Schollmeyer	28	HU-4	20		16.0	"	"	1.00	16.00	
<u>GRAZING</u>										
Louis Sartz	56	GU-8	45	20		8/15	- 10/15	.50	10.00	
William Sartz	29	GU-4	25	8		7/15	- 9/15	.50	4.00	

Totals:

Acreage grazed.....	70	Animal use months.....	28	Total income Grazing.....	14.00
Acreage cut for hay.....	130	Tons of hay cut.....	124.06	Total income Haying.....	124.06

EASEMENT REFUGES OF DISTRICT 4aClearwater Lake National Wildlife Refuge:

The area was visited on October 13 and again on October 21, 1951. On both dates large concentrations of ducks were observed using the entire water area of the lake. According to the local farmers, the ducks were present this year in greater numbers than ever before, due probably to the abundance of food in the swathed grain fields. Several depredation complaints were received but the complainers were willing to stand the loss in return for the excellent hunting afforded the surrounding area.

Due to extensive land use there is little habitat for upland game birds. None were observed, but the local farmers report fair numbers of sharp-tailed grouse and hungarian partridge in that area.

Twelve muskrat houses were observed and one permit has been issued for trapping on the easement in accordance with State regulations.

This easement continues to be a popular spot for picnicking and swimming during the summer and early fall months. A small bath house has been constructed with volunteer labor from Stanley, North Dakota during this past summer.

Shell Lake National Wildlife Refuge:

This lake again supported large concentrations of fall migrants. The area was visited on October 21 and at that time an estimated 20,000 ducks were present, composed of about 60% mallards and pintails. Also observed were 4 whistling swan. Little complaint has been received from this area due to duck depredations as the local people appreciate the excellent goose hunting that has been improving yearly since the establishment of the refuge.

Here, too, extensive farming to the waters edge has destroyed most of the upland game bird habitat and few upland game birds are to be found in the vicinity of the refuge.

Several hunters were contacted and all were well pleased with hunting conditions. Their game bags showed excellent results with all having near limits after only a few hours in the field.

Lake Zahl National Wildlife Refuge:

This refuge was visited on October 2 and again on October 20. The area was again heavily utilized by waterfowl. Water levels were somewhat higher than one year ago and proved very attractive to the large concentrations present. Good hunting is to be had in this area of the State and local people show no resentment to the refuge.

Fur Bearer signs indicate that the badger is the most prevalent and as usual the dike shows the results of their activities. Again next spring the dike will have to be repaired and all holes filled in as weather permits. Three permits have been issued to landowners and local people for the removal of mink, muskrat and other fur-bearers in accordance with State regulations and open seasons.

Funds have been set up for construction of a new boundary fence around the newly acquired Section 36 and the job will be completed in the spring as soon as time and weather permit.

All signs and markers were replaced or repaired as necessary prior to the opening of the hunting season. Tracings of the map of the refuge were furnished to business men in Zuhl, North Dakota to aid them in giving information as to refuge boundaries to visiting hunters.

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WATERFOWL

Refuge Clearwater Lake Months of September to December 194 51

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>		None observed.								
Whistling swan										
II. <u>Geese:</u>		None observed.								
Canada goose										
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard				900	10/21					1,500
Black duck		None observed.								
Gadwall				100	10/21					100
Baldpate				50	10/13					50
Pintail				200	10/21					400
Green-winged teal		None observed.								
Blue-winged teal				300	10/13					550
Cinnamon teal		None observed.								
Shoveller				50	10/21					100
Wood duck		None observed.								
Redhead				450	10/21					500
Ring-necked duck		None observed.								
Canvas-back				300	10/21					350
Scaup				700	10/21					1,000
Golden-eye		None observed.								
Buffle-head		None observed.								
Ruddy duck				100	10/13					200
IV. <u>Coot:</u>				250	10/21					300

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 5,050

Peak waterfowl numbers 3,400

Areas used by concentrations Entire water area.

Principal nesting areas this season _____

Reported by J.R. Frye

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Shell (McAlmond) Lake Months of September to December 1951

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan			4	10/21					10
II. <u>Geese:</u> Canada goose			50	10/21					100
Cackling goose	None observed.								
Brant	None observed.								
White-fronted goose	None observed.								
Snow goose	None observed.								
Blue goose	None observed.								
III. <u>Ducks:</u> Mallard			15,000	10/21					20,000
Black duck	None observed.								
Gadwall			300	10/21					300
Baldpate			100	10/13					100
Pintail			2,000	10/21					3000
Green-winged teal	None observed.								
Blue-winged teal			500	10/13					600
Cinnamon teal	None observed.								
Shoveller			100	10/21					150
Wood duck	None observed.								
Redhead			1,200	10/21					1,500
Ring-necked duck	None observed.								
Canvas-back			600	10/21					800
Scaup			800	10/21					800
Golden-eye	None observed.								
Buffle-head			25	10/13					50
Ruddy duck			150	10/21					200
IV. <u>Coots:</u>			3,000	10/21					3,500

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 31,110

Peak waterfowl numbers 23,629

Areas used by concentrations Entire water area.

Principal nesting areas this season _____

Reported by J.R. Frye

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Lake Zuhl Months of September to December 1945

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan	None observed.								
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose	None observed.								
III. <u>Ducks:</u> Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck			4,500	10/20					6,000
	None observed.		100	10/2					150
			25	10/2					25
			500	10/20					600
	None observed.		150	10/2					200
	None observed.		50	10/20					150
	None observed.		250	10/2					350
	None observed.		300	10/2					400
			600	10/20					800
	None observed.								
	None observed.		250	10/2					300
IV. <u>Coot:</u>			300	10/2					500

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 9,475

Peak waterfowl numbers 7,025

Areas used by concentrations Entire water area.

Principal nesting areas this season _____

Reported by J.R. Frye

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

LAKE ILO REFUGE

I. GENERAL

A. Weather Conditions.

Precipitation was about average for May and June while the amount received for July and August was below average. The month of May from the weather standpoint was little more than a continuation of winter. Eight inches of snow was recorded for the first week and a hard freeze occurred on the 20th of this month. The first frost of fall came on August 19. The period generally was cooler than the average temperature for normal years. The following weather data tabulation compares recordings for 1950 with 1949.

<u>Year</u>	<u>Month</u>	<u>Precipitation</u>	<u>Temperature</u>	
			<u>Max.</u>	<u>Minimum</u>
1959	May	3.83	83	26
	June	4.31	91	30
	July	.72	97	38
	August	.83	91	29
	Total	9.69	97	26
1949	May	1.29	95	34
	June	2.42	104	42
	July	3.00	102	38
	August	3.37	110	32
	Total	10.08	110	32

B. Water Conditions.

Ice went out of Lake Ilo on May 13, this year. The Lake level was 3" above spillway crest at the beginning of the period and increased to 7" on May 13. By June 1st only a small flow of water was going over the spillway. From approximately this date to the close of the period, water-level receded to 11" below the spillway.

C. Fires.

No fires are reported for the period. We are again faced with the usual hazard for the fall period.

II. WILDLIFE

A. Migratory Birds.

The population for all migratory birds showed a decrease from 1949 for the months of May, June and July. However, it is believed that the numbers for August were equal to last year's population. The first brood count was made on July 20; 128 broods were recorded. The first count of 1949 showed 206 broods and for 1948, 200 broods. The estimated population of ducks for July totaled 1100 adults. The estimate for August was 12,000

consisting of the following: 4,000 B.W. Teal, 4,000 mallards, 2000 pintail, 1000 baldpates and 1000 other ducks made up of shoveller, ruddy, G.W. Teal. It is believed that the largest B.W. Teal population ever reported was present during August, and there appears to be more baldpates than usual.

General observations indicated that less shore birds used the area than in the past. An estimated 2000 shore birds consisting of Wilson's Phalarope, greater and lesser yellow-legs, willets, killdeer, avocets and spotted sand-piper used the refuge during the period. White pelicans were present throughout the report period with 270 being counted on August 26. Blue herons were present in less numbers than normal.

There was again this year an abundance of all common acuquatics and provided more than ample food and cover.

B. Upland Game Birds.

Early in May, an estimated 200 pheasants were in the refuge. In a small 40 acre field south of headquarters, 15 hens and 5 cocks were counted at that time. Since then, very few adult pheasants or broods have been observed. On this same 40 acres, only one brood, 2 hens and 1 cock bird were seen during July and August. In our opinion, the pheasants are at the lowest ebb since the refuge was constructed. This seems to be the general concensus of opinion from farmers in the vicinity. A roadside count on two miles of refuge roads revealed only two broods. Not a single pheasant brood was seen when the Aug. 8 duck brood count was made which covered all roads and shore line at the early morning hour when pheasants usually are in open areas. On Aug. 30 a trip was made to easement refuges covering 250 miles. Over this entire distance only one brood of 6 young and 2 adult hen birds were seen. These figures are surely indicative of the low pheasant population.

No prairie chickens were observed during the period. Two adult "sharptails" and only one brood have been seen in or within the vicinity of the refuge. The few Hungarian or European partridge seen, although small, indicate that this bird has increased slightly. The number is considered small.

C. Big Game Animals.

None observed.

D. Fur Animals, Predators, Rodents and other Mammals.

A limited number of mink have been seen on the refuge as well as signs of the animals. At the present time, our opinion as to the population is about the same as last year.

Weasels, according to sight observations and signs, are on an increase. The population is not, as yet, sufficient to cause alarm.

The muskrat population appears to have decreased approximately 30% from 1949. It was estimate that from 500 - 600 "rats" were using the refuge. Only 60 animals were taken during the fur harvest of 1949.

F. Fish.

The fishing season opened May 16 for perch, crappies and wall-eyed pike. The season for nest building fish; bass and bluegills, opened June 16. Fishing success was lower than any season during the past few years. The catch for perch, bluegill and bass was only fair while the number of crappies taken was far below average.

A large number of fish died from some undetermined cause during the period from June 20-30. It is estimated that 15,000 dead fish of all species common to the area washed up on the east shore of the Lake. 2,336 of these were picked up on 400 ft. of shore line near the headquarters area. No dead or dying fish have been observed since June 30.

III. REFUGE DEVELOPMENT - MAINTENANCE

A. Physical Developments.

1. Completed repair to last winter's snow damaged fence.
2. Repaired all tools used at Lake Ilo.
3. Replaced double 2 ft. concrete culverts in refuge road that were washed out this spring. The job was completed by hauling 28 Cu. Yds. of fill and placing over culverts.
4. Made several steel corner posts.
5. Hauled 25 Cu. Yds. of scoria and repaired surface of refuge roads.
6. Cleaned out septic tank.
7. Moved old chicken house away from headquarters.
8. Installed new 10 X 30 ft. asphalt roofing on barn and chicken house.
9. Received R.E.A. Electric power at headquarters.
10. Installed and painted new 6 in. cedar siding on barn and chicken house. Removed old siding and re-nailed boards.
11. Received and installed electric refrigerator at headquarters.
12. Inspected and picked up dead fish on shore line of Lake Ilo.
13. Re-nailed boards, installed new 6" cedar siding and painted garage, 16X24 ft., two coats.
14. ^Wake brood count on Lake Ilo Refuge July 20 and Aug. 8, 1950
15. Installed small pump for watering lawn at headquarters. Watered Lawn upon completion of installation as necessary.
16. Mowed weeds along refuge roads.
17. Enlarged doors in garage from 10' to 12'. Doors were constructed from salvaged siding and installed.
18. Installed new enameled wall covering on kitchen of Lake Ilo residence.
19. Moved small granary, 10X10 ft. from below dam to headquarters. Concrete foundation was constructed.
20. Constructed 3/4 mile of new refuge boundary fence.

B. Plantings.

No crops were planted by refuge personnel. The following crops were planted the indicated share-croppers: Tom Donahoe, 8 acres corn, 12 acres wheat and 25 acres summer fallowed; Charles Schollmeyer, 20 acres wheat, 20 acres barley and 10 acres summer fallowed. The 8 acres of corn and $7\frac{1}{2}$ acres barley will be left standing for wildlife food. $3\frac{1}{2}$ acres barley and 2 acres of wheat were harvested for refuge emergency wildlife feeding.

Crops were fair in this vicinity; Refuge wheat averaging 20 bu. to the acre and barley, 35. The corn is very late and it is doubtful if any will mature. A large percentage of corn was hit by the frost and has been cut for feed.

Four haying permits were issued to neighboring farmers. All hay has been harvested and stack measurements will be taken after hay has settled the necessary length of time. Two grazing permits are in effect at the present time.

VI. PUBLIC RELATIONS

A. Recreational Uses.

The recreational area was again under the management of the Dunn County through a cooperative agreement with the Service. They have cultivated trees, mowed grass and kept the picnic grounds clean and orderly. In addition, 1228 trees were planted and cultivated. An exceptionally large number of people utilized the area to it's greatest advantage.

Mr. Dinkins advises that he read in the Killdeer Herald, County paper, that 12,000 wall-eyed pike were stocked in Lake Iloy, but no official notification has been received from the State Game and Fish Department.

EASEMENT REFUGES - DISTRICT IV

HIDDENWOOD

I. General.

Precipitation for this area was below normal for the period. Fair crops were produced. Water levels were higher than usual at the beginning of the period and 12" below crest at the end of August.

II. Wildlife.

Very few birds have been observed on this area during the summer months. When the refuge was inspected on July 14, only 7 adult ducks and

no broods were observed. 250 ducks were counted on the Sept. 1, visit and consisted of the usual variety: mallard, pintail, B.W. teal, canvasback and ruddy. Only two broods of canvasback were seen this date.

Signs of pheasants were observed, but none being seen. No sharp-tailed grouse or European partridge were seen although, it is believed, a small number are using the area.

The chief aquatic in normal years is bullrush and usually covers the water area. This year, only small scattered patches are present along the shore line.

The muskrat population for 1950 is believed to be only 50% of that for 1949. The present animals are using shore lines where trees and grass are growing and are apparently feeding here due to the shortage of aquatic growths. The mink signs observed indicate the population is comparable to last year.

III. Physical Developments.

1. Brood counts and wildlife observations.
2. Refuge markers were checked and repaired or replaced.

LAKE PATRICIA

I. General.

Rainfall was above normal during the first part of the period and below for the latter two months. Fair crops are being harvested at the close of the report period. Water level was higher than normal for the summer months. It was 1 ft. below the spillway crest on July 19, and approximately 18" below Aug. 31.

II. Wildlife.

A brood count was made on July 19 and 17 broods recorded. Listing of the broods is included in the Easement IV. brood data tabulation which follows. Total waterfowl usage of the area was below records for 1949.

No ring-necked pheasants were observed on the July 19 duck brood count. This gaudy bird, from all indications, has not been so scarce since the refuge was put into operation. There are undoubtedly a very few using the area which is also true for the sharp-tailed grouse and European Partridge although no actual observations were made.

III. Physical Developments.

1. Brood counts, wildlife observations and routine inspection.

LEGION LAKE

I. General

Precipitation was above normal for May and June with very little occurring for July and August. The water level in early May produced only a small flow over the spillway and on Aug. 31 was 12" below spillway crest. Escape cover along shore lines was good throughout the period.

II. Wildlife.

Ten broods were recorded on the count of July 19. It was felt that, in view of this year's late season and corresponding late hatch, this date was too early to obtain a good representative figure. Mr. Hammond, Biologist, assisted by Mr. Lindmier, Student Assistant, conducted quite a detailed survey on habitat, duck nesting and effects of grazing on the area results of which will probably be included in Mr. Hammond's report.

The following birds were recorded on the inspection trip of Sept. 1: 110 white pelicans, 2 cormorants, 30 gulls, 300 shore birds, 400 ducks consisting of mallards, B. W. Teal, pintails, baldpates and shovellers, 3 black-crowned night herons and 2 great blue herons.

No pheasants were observed, however, signs indicated that the area is supporting a fair population for the current low of this species. Sharp-tailed grouse and European partridge also escaped observation leading us to believe that their numbers were small.

III. Physical Developments

1. Boundary markers were checked and repaired or replaced.

MCLEAN

I. General.

Precipitation above normal for the first one half of the period and below for the second half. Fair crops were harvested in the vicinity. A small flow of water was passing over the spillway early in May and 15" below spillway level at the close of the period.

Bullrush stands appeared to be the best since the refuge was built providing an abundance of protective and nesting cover for many waterfowl species.

II. Wildlife.

The brood count of July 19, was also too early considering the late nesting season. Only two broods were observed. A count taken on a later date, would have found a considerable number broods using this refuge.

Mink signs observed were common and were indicative of an increase over 1949. The muskrat population appears to have gone the other way or decreased since last year.

The following birds were seen on the routine inspection trip of Sept. 1: 500 ducks consisting of 70% mallards, 20% B.W. Teal, 10% baldpate, pintail and shoveller; 2 great blue herons, 3 marsh hawks, 200 shore birds.

III. Physical Developments.

1. Hauled and placed 40 Cu. Yds. of rock on down stream slope of spillway.
2. Repaired rip-rap on bridge below spillway.
3. Boundary markers were checked and repaired or replaced.
4. Brood counts and wildlife observations.

PRETTY ROCK

I. General.

Precipitation; above normal for May and June, below normal for July and August. Crop yields are above those for last year.

Water level; slightly above spillway level in May to 12" below for the latter part of August. Spillway damaged by last springs run-off. Plans are being made at the present time and money is to be allowed for repairing spillway.

II. Wildlife.

Brood count was made on July 19 and 39 broods were listed which is two more than last year's count, but still below top production for the past years. Here, as on the other Easements, many ducks were still incubating. Ideal cover and nearby food sources were in abundance and will no doubt afford the necessary environment for a large number of fall migrant waterfowl.

No upland game birds were observed during the date of the brood count. The presence of any species is undetermined. At least two cock pheasants announced their presence by crowing.

According to signs, the mink and muskrat population is about the same as for last year.

III. Physical Developments.

1. Brood count, general inspection and wildlife observations.
2. Refuge markers checked and determined to be in fair condition.

STEWART LAKE

I. General.

Precipitation; above normal for May and June, below normal for July and August. Corn crop in vicinity was heavily hit by the frost on Aug. 19 and it appears doubtful if any corn will mature this season. Water level; slightly above spillway crest in May and 24" below for Aug. 31. The spring run-off resulted in damage to the spillway and plans for this refuge also are being formulated and money is to be allotted for repair work.

II. Wildlife.

The area was visited for inspection and brood count on July 18. On this date, the area was practically void of waterfowl. Only two broods were recorded and only one duckling in one of these. There were an estimated 4000 ducks using this refuge on August 31. Of these, 40% blue-winged teal, 30% mallards, 20% baldpate and 10% pintail and shoveller. 98 young coot were counted; 200 shore birds and 50 gulls.

From observed indications, the ring-necked pheasant population is down from last year while the "sharp-tails and "Huns" are about the same.

The mink population appears to be slightly increased from last year while the muskrat has decreased. None of the latter animals were observed although some of their workings were noted. One young mink was heard and then located apparently lost from it's den.

III. Physical Developments.

1. Boundary markers were checked and repaired or replaced.
2. Brood counts and wildlife observations.

WHITE LAKE

I. General.

Precipitation; above normal for May and June; below normal for July and August. Crops fair on the area and in vicinity with the exception of corn which was hard hit by frost on Aug. 19. Water level; slightly above spillway crest at beginning of period and 24" below spillway level at close of period.

II. Wildlife.

Only two broods were seen on the count of July 18, 1950. This is far below the 36 broods recorded for June 13, 1949. The area was again visited on Aug. 31 for routine inspection and wildlife observation at which time the following birds were seen: 400 ducks consisting of 30% mallards, 30% pintail, 20% B.W. Teal and 10% baldpates and shovellers.

A small number of gulls and shorebirds were present.

Mink signs were numerous and some muskrat activity was in evidence.

III. Physical Developments.

1. Brood counts and wildlife observations
2. Boundary markers were checked and repaired or replaced.

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NOTE; The above report on Lake Ilo and the District IV Easement Refuges was prepared largely on data supplied by Mr. Chesley M. Dinkins, Maintenance Man (General).

Following is a tabulation showing the total number of broods and young actually observed on the Easement Refuges.

EASEMENT REFUGE BROOD DATA

	<u>: Hiddenwood</u>		<u>: Lake Ilo</u>		<u>: Lake Patricia</u>		<u>: Legion Lake</u>		
Species:	Broods:	Young:	Broods:	Young:	Broods:	Young:	Broods:	Young:	
Mallard	;;NONE	: NONE	;; 26	: 132	;; 5	: 25	;; 1	: 7	;;
Gadwall	;;	:	;; 5	: 30	;;	:	;;	:	;;
Baldpate	;;	:	;; 20	: 128	;;	:	;;	:	;;
Pintail	;;	:	;; 23	: 127	;; 6	: 39	;; 4	: 30	;;
G.W.Teal	;;	:	;; 2	: 9	;;	:	;;	:	;;
B.W.Teal	;;	:	;; 25	: 176	;; 1	: 2	;; 3	: 29	;;
Shoveller;	;;	:	;; 23	: 150	;;	:	;; 1	: 12	;;
Redhead	;;	:	;;	:	;;	:	;;	:	;;
Canvas-back	;;	:	;;	:	;;	:	;;	:	;;
Scaup	;;	:	;;	:	;;	:	;;	:	;;
Ruddy	;;	:	;;	:	;;	:	;;	:	;;
Coot	;;	:	;; 1	: 3	;;	:	;;	:	;;
Unidentified	;;	:	;; 2	: 15	;; 4	: 19	;; 1	: 5	;;
Total	None	None	127	768	16	85	10	82	

EASEMENT REFUGE BROOD DATA (CONTINUED)

Species	McLean		Pretty Rock		Stewart Lake		White Lake	
	Broods	Young	Broods	Young	Broods	Young	Broods	Young
Mallard	2	1	2	10	2	1	1	3
Gadwall	2	1	2	1	2	2	2	2
Baldpate	2	1	2	3	2	2	2	2
Pintail	2	1	2	7	2	1	4	2
G.W. Teal	2	1	2	2	2	2	2	2
B. W. Teal	1	8	2	1	2	2	2	2
Shoveller	2	1	2	2	2	2	2	2
Scaup	2	1	2	1	2	2	2	2
Coot	2	1	2	2	2	2	2	2
Unidentified	2	1	2	7	2	2	1	7
Total	2	10	2	34	2	2	2	10

Total production for Lake Ilo and Easement Refuges in District IV was 193 broods and 1191 ducks and coots actually counted. The total for 1949 was 252 broods and 1630 ducks.

EASEMENT REFUGES OF DISTRICT 4a

Clearwater National Wildlife Refuge:

The area was visited on July 18, 1950, and again on August 8, for inspections and brood counts. All land suitable for any type of farming practice was utilized and down to within the water's edge where the beach would permit the use of machinery. Re-posting work is necessary and is planned for the future when time permits. Water conditions and aquatic cover was adequately satisfactory for this type of area. The dispersed condition of broods and the wild actions of adult ducks indicated considerable disturbance throughout the period. Brood data is combined in report for District 4a Easements.

Shell Lake Easement Refuge:

We were able to visit this Easement only once during the period and that was on July 19, 1950, when the brood count and general inspection trip was made. The area is also miss used from the agricultural standpoint. Water conditions and cover was good and probably accounts for the fair showing of broods observed as listed below. Refuge markers, generally speaking, were in fair condition, with only an occasional one needing replacement.

Zahl Easement Refuge:

The general condition of this easement as observed on July 18, 1950 was good. A brood count was taken at this time and a fair representative number of broods were observed, although lower than for the average of preceding years. Badger holes in the dike were caved in and repaired, signs replaced on south boundary and cut weeds on dike.

Easement District 4a Brood Data

Refuge	Species	Date	Number in broods by age classes					Total Young
			Ia	Ib	IIa	IIb.	III	
Clearwater								
	B.W.Teal	7/18	8					8
	Mallard	8/8					6	6
	B.W.Teal	8/8	4,5		2	7,6,5		29
	Redhead	8/8	5,6					11
	Can.-back	8/8	3					3
	Ruddy	8/8			8			8
	Coot	8/8	(7 young)					7
	Total:		31		10	18	6	65
Shell Lake								
	Mallard	7/19	10,7	7,10				34
	Gadwall	"	11,4					15
	G.W. Teal	"		3				3
	B.W. Teal	"	8,12					20
	Pintail	"		2	7			9
	Total:		52	22	7			81

Easement District 4a Brood Data

Refuge	Species	Date	Number in broods by age classes					Total Young
			Ia	Ib	IIa	IIB	III	
Zahl	Mallard	7/18	8	6				14
	Gadwall	"	11,5					16
	B.W.Teal	"		10				10
	Shoveller	"	4					4
	Pintail	"	6		7,10			23
	Total:		34	16	17			67

WATERFOWL

Refuge Lake Ile Months of May to August 194/50

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans</u> :										
Whistling swan										None
II. <u>Geese</u> :										
Canada goose										None
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks</u> :										
Mallard				4000	8/20-31			27	250	4500
Black duck										
Gadwall				100				5	50	150
Baldpate				1000	8/20-31			20	200	1200
Pintail				2000	8/20-31			23	200	2500
Green-winged teal				50				2	20	50
Blue-winged teal				4000	8/20-31			25	300	4500
Cinnamon teal										
Shoveller								23	220	350
Wood duck										
Redhead		None seen this period.								
Ring-necked duck		None seen this period.								
Canvas-back										
Scaup										
Golden-eye										
Buffle-head										
Ruddy duck				40	8/20-30					50
IV. <u>Coots</u> :										
								1	12	200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period _____

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by _____

INSTRUCTIONS

- (1) **Species:** In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) **First Seen:** The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) **Peak Concentration:** The greatest number of the species present in a limited interval of time.
- (4) **Last Seen:** The last refuge record for the species during the season concerned in the reporting period.
- (5) **Young Produced:** Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) **Total:** Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Lake Ile Months of May to August 1945

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Number
I. Water and Marsh Birds:										
Eared Grebe			220	8/20-30					100	400
Western Grebe			None	Seen						10
Pied-Billed Grebe								10		30
White Pelican			270	"						500
Double Crested Cormorant			10	8/20-31						20
Great Blue Heron			10	"						20
Black-Crowned Night Heron			12	"					8	20
II. Shorebirds, Gulls and Terns:										
Killdeer									100	200
Willet										25
Greater Yellow-Legs										50
Lesser Yellow-Legs										100
Spotted Sand Piper										100
Dowitcher										50
Marbled Godwit										25
Avocet										50
Wilson's Phalarope										200
Gulls										1000
Common Terns										500

(over)

WATERFOWL

Refuge Hiddenwood Months of May to August 1946 50

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>										
Whistling swan										None
II. <u>Geese:</u>										
Canada goose										None
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard				100	8/20-31					250
Black duck					"					
Gadwall				10	"					10
Baldpate				20	"					30
Pintail				50	"					100
Green-winged teal										
Blue-winged teal				100	"					100
Cinnamon teal										
Shoveller				20	"					40
Wood duck										
Redhead										
Ring-necked duck										
Canvas-back				20	"			2	16	25
Scaup										
Golden-eye										
Buffle-head										
Ruddy duck				25	"					
IV. <u>Coots:</u>				200	"					200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period _____

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by _____

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Lake Patrioia Months of May to August 1946 50

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									None
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose									None
III. <u>Ducks:</u> Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck			300 50 50 200 20 200 100	8/20-30 " " " " " " "			5 6 1	50 80 50	400 50 75 300 40 300 100
IV. <u>Coots:</u>			100	"					100

3-1750
(July 1946)

(over)

Form NR-1

55

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period _____

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by _____

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Legion Lake Months of May to August 194/50

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans</u> :										
Whistling swan										None
II. <u>Geese</u> :										
Canada goose										None
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks</u> :										
Mallard				100	8/20-31			1	25	200
Black duck										
Gadwall				25	"					30
Baldpate										
Pintail				100	"			4	50	100
Green-winged teal										
Blue-winged teal				200	"			3	25	200
Cinnamon teal										
Shoveller				60	"			1	12	60
Wood duck										
Redhead										
Ring-necked duck										
Canvas-back				20	"					40
Scaup										
Golden-eye										
Buffle-head										
Ruddy duck				25	"					25
IV. <u>Coots</u> :				200	"					200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period _____

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by _____

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Lake McLean Months of May to August 1946

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									None
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose									None
III. <u>Ducks:</u> Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck			550 50 100 100	8/20-31 " " "			1	25	400 20 50 100 150
IV. <u>Coot:</u>			100	"					150

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period _____

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by _____

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Pretty Rock Months of May to August 1946

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>										
Whistling swan										None
II. <u>Geese:</u>										
Canada goose										None
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard				1000	8/20-31			10	100	1500
Black duck										
Gadwall				30	8/20-31			1	9	50
Baldpate				150	8/20-31			3	21	250
Pintail				800	8/20-31			7	58	1000
Green-winged teal				20	8/20-31					20
Blue-winged teal				800				1	50	800
Cinnamon teal										
Shoveller				200	8/20-31			3	24	200
Wood duck										
Redhead										
Ring-necked duck										
Canvas-back										
Scaup								1	7	25
Golden-eye										
Buffle-head				20	8/20-31				12	20
Ruddy duck										
IV. <u>Coots:</u>				500					200	800

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period _____

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by _____

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Stewart Lake Months of May to August 1946 50

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>										
Whistling swan										None
II. <u>Geese:</u>										
Canada goose										
Cackling goose										
Brant										
White-fronted goose										
Snow goose										None
Blue goose										
III. <u>Ducks:</u>										
Mallard				1200	8/20-31			1	10	1500
Black duck										
Gadwall										
Baldpate				800	"					1000
Pintail				200	"			1	30	400
Green-winged teal										
Blue-winged teal				1600	"				30	2000
Cinnamon teal										
Shoveller				200	"				20	200
Wood duck										
Redhead										
Ring-necked duck										
Canvas-back										
Scaup										
Golden-eye										
Buffle-head										
Ruddy duck										
IV. <u>Coots:</u>				200	"				98	200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period _____

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by _____

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge White Lake Months of May to August 194 50

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>										
Whistling swan										None
II. <u>Geese:</u>										
Canada goose										
Cackling goose										None
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard				200	8/20-31			1	10	300
Black duck										
Gadwall				25	"				10	250
Baldpate				200	"				20	300
Pintail				200	"				20	300
Green-winged teal										
Blue-winged teal				200	"				20	300
Cinnamon teal										
Shoveller				50	"					50
Wood duck										
Redhead										
Ring-necked duck										
Canvas-back										
Scaup										
Golden-eye										
Buffle-head										
Ruddy duck										
IV. <u>Coots:</u>										100

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period _____

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by _____

INSTRUCTIONS

- (1) **Species:** In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) **First Seen:** The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) **Peak Concentration:** The greatest number of the species present in a limited interval of time.
- (4) **Last Seen:** The last refuge record for the species during the season concerned in the reporting period.
- (5) **Young Produced:** Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) **Total:** Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge District IV Easements, as listed; Months of May to August, 1945

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
<u>LAKE ILO</u>						
Pheasant		9 150			175	
Sharp-tailed Grouse					10	
Hung. Partridge		2 60			70	
<u>HIDDENWOOD</u>						
Pheasant		10			15	
Sharp-tailed Grouse		10			20	
Hung. Partridge		20			30	
<u>LAKE PATRICIA</u>						
Pheasant		None 100			150	
Sharp-tailed Grouse		8			23	
Hung. Partridge		20			40	
<u>LEGION LAKE</u>						
Pheasant		None 20			30	
Sharp-tailed Grouse		15			30	
Hung. Partridge		30			35	
<u>MoLean</u>						
Pheasant		None			10	
Sharp-tailed Grouse		10			15	
Hung. Partridge		20			25	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

Refuge District IV Easements, as listed: Months of May to August, 1944 50

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge Pertinent information not specifically requested. List introductions here.
<u>PRETTY ROCK</u> Pheasant Sharp-tailed Grouse Hung. Partridge			None 40 10 20			50 30 30
<u>STEWART LAKE</u> Pheasant Sharp-tailed Grouse Hung. Partridge			10 20 20			20 50 50
<u>WHITE LAKE</u> Pheasant Sharp-tailed Grouse Hung. Partridge			15 10 20			30 20 30

* Only columns applicable to the period covered should be used.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

WATERFOWL

Refuge Clear Lake Easement Months of May to Aug. 1945

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans</u> : Whistling swan									
II. <u>Geese</u> : Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose									None
III. <u>Ducks</u> : Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck							1 7 2 1 1	20 75 30 10 15	200 150 50 50 50
IV. <u>Coot</u> :							2	10	200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks 150

Coots 10

Total waterfowl usage during period 925

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by Claude R. Alexander

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Shall Lake Basement Months of May to Aug. 1946

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>										
Whistling swan										
II. <u>Geese:</u>										
Canada goose										
Cackling goose										
Brant										
White-fronted goose										None
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard								4	70	500
Black duck										
Gadwall								2	30	300
Baldpate									80	200
Pintail								2	50	400
Green-winged teal								1	3	30
Blue-winged teal								2	50	300
Cinnamon teal										
Shoveller										75
Wood duck										
Redhead										35
Ring-necked duck										
Canvas-back										125
Scaup										30
Golden-eye										
Buffle-head										
Ruddy duck										150
IV. <u>Coots:</u>										1000

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks 223

Coots _____

Total waterfowl usage during period 3145

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by Claude R. Alexander

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Zahl Easement Months of May to Aug. 194 50

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose									None
III. <u>Ducks:</u> Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck							2 2 3 1 1	50 25 50 135 25 40 40 40	400 200 75 350 500 75 550 550 50
IV. <u>Coots:</u>									2500

3-1750
(July 1946)

(over)

Form NR-1-

SUMMARIES

Total Production:

Geese _____

Ducks 405

Coots _____

Total waterfowl usage during period 5800

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by Claude R. Alexander

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

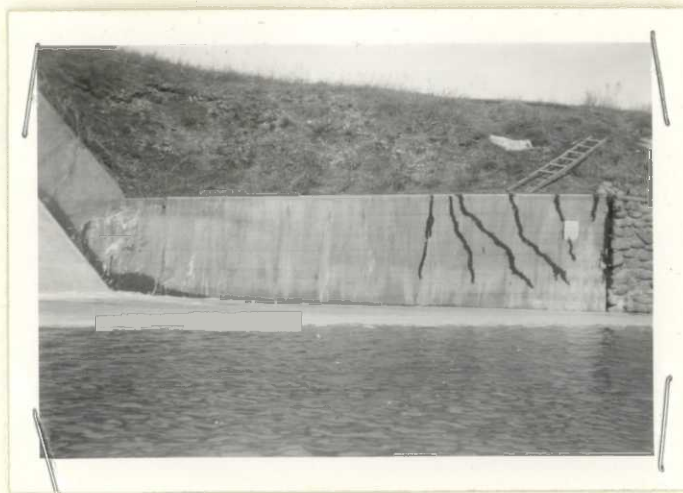
Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.



Lake Ilo Spillway at peak runoff. 4/15/50

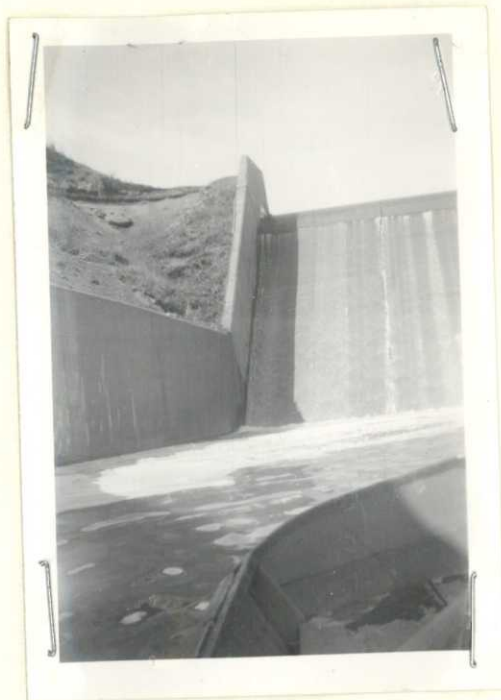


Lake Ilo Spillway with 30" water being discharged. Note wingwalls are within several inches being topped. 4/15/50



Cracked portions wing-wall Lake Ilo Spillway 4/30/50. Wall has been pushed out 12" by frost action and is in danger of tipping completely.

Lake Ilo Spillway with only
3" discharge. 4/30/50



Winter fishing success at
Lake Ilo. March, 1950



Pretty Rock Spillway snow removal 3/24/50. Similar channels cut through snow on 3 separate occasions.



Pretty Rock Refuge township road damaged by high water in April, 1950. Road was topped by $2\frac{1}{2}$ ' water.





Pretty Rock Refuge main dike only slightly damaged by floods of April, 1950.



Stewart Lake Refuge showing damage to spillway from peak run-off, April, 1950.

Stewart Lake Spillway showing settling of rock spillway on east side, April 1950.



Stewart Lake spillway settling of rock spillway on west side. Center portion remained in place, April, 1950.



LAKE ILO REFUGE

I. GENERAL

A. Weather Conditions.

Precipitation was above normal at the Lake Ilo Refuge during the report period. 6.44" of precipitation was received in the form of snow during the period with 14" in January, 5" in February, 20" in March and 13" in April. The largest amount of snow on the ground at one time was during March. January was the coldest on record in North Dakota, 17.2 degrees below normal and 32.2 degrees below January of 1946. February, March and April were colder than normal, and this spring is believed to be the latest spring on record. Several inches of snow was on the ground at the end of the report period and no farming has been accomplished in this area to date. Usually most of the small grain has been seeded by the first of May. The spring run-off occurred on the 15th of April, approximately 25 days later than normal. Following is data on maximum and minimum temperatures and precipitation during the period:

<u>Month</u>	<u>Precipitation</u>	<u>Snowfall</u>	<u>Max. Temp</u>	<u>Min. Temp.</u>
January	1.60	14"	41	-43
February	.33	5"	45	-25
March	1.61	20"	48	-25
April	1.90	13"	63	12
Total:	5.44	52"		

B. Water Conditions.

The Lake Ilo ice level was 24" below spillway crest at the beginning of the period and remained at this level until March 23. On this date the water level began increasing and came up to 4" below spillway crest by 6:00 P.M. On April 24 a small stream was flowing over spillway crest and continued to run over spillway for the remainder of the report period. Water level reading on the following dates 3/27, 4"; 4/7, 6"; 4/9, 5"; 4/11, 4"; 4/12, 7"; 4/13, 8"; 4/14, 12"; 4/15, 1.8' at 8:00 A.M. 2' at 6:00 P.M. and 2.3' at 10:00 P.M.; 4/16, 2'; 4/17, 18"; 4/18, 12"; 4/21, 5". The level has continued to recede and is only 3" above spillway crest at the present time. The ice level was measured the later part of February and found to be 36" thick. Approximately 2/3 of the lake is covered with ice at the close of the period.

C. Fires.

None.

II. WILDLIFE

A. Migratory Birds.

Approximately 600 mallards used the refuge during part of January, February and March. At times no ducks would be observed for days but they would reappear from time to time. The lake was completely frozen over during the winter months but they would sit on the ice and stay in crest below dam on the refuge. The first waterfowl migrants appeared on March 4. On this date 23 Canada geese were seen on the refuge and 75 Pintail were seen on March 28. The spring migration was very slow and late and the number of migrants was fewer than can be recalled in the past. On April 6 it was estimated that 3,000 ducks and 60 Canada Geese were on the refuge. The ducks consisted mostly of Mallard and Pintail with a few Scaup, Shoveller and Baldpate. 300 snow geese and one blue goose was seen on April 13 and several flocks were seen during the next week. No white fronted geese were seen on the refuge during migration. A small number of sandhill cranes used the refuge but it is believed their numbers were smaller than last year. Shore bird migration has been very poor with only the following having been observed. A few Killdeer and Willett. A few Franklin's and Ring-Billed Gull have been observed using the refuge.

B. Upland Game Birds.

It is estimated that 300 pheasants used the refuge during the period. About 200 pheasants were using the area at the close of the period and it appears that there are less hens than there were last fall or early winter. Winter loss was small, but a few dead birds have been observed from time to time after some of our more severe blizzards. A few partridge and sharp-tailed grouse have been observed on the refuge during the period. It is believed their number is smaller than last year. The sharp-tailed grouse population is believed to be larger in the near vicinity, such as the badlands to the north.

C. Big Game Animals. None.

D. Fur Animals, Predators, Rodents, and other Mammals.

The long cold winter may have resulted in the loss of a few muskrats due to our low water level, but a good breeding stock remains on the refuge. 60 muskrats were trapped during the season, 58 in December and 2 during the report period. Very few muskrats were trapped in this vicinity due to the cold weather and low prices. 4 Mink were trapped during the period. Additional mink would have been trapped if the weather had not been so severe. A number of mink signs have been observed this spring, and about 15 to 20 are using the area at this time. Two weasels were trapped during the season and several have been seen on the refuge during the period. Their number is believed to be larger than it has been for a number of years. Three coyotes and one fox have been seen on the refuge during the first part of the period. A number of coyotes and one fox were killed near the refuge by the Predator and Rodent Control Division, but there are very few coyotes remaining in this locality. One beaver was trapped by the share-trapper and we now feel that this was the only one on the refuge, as no signs have been observed recently near the place where this

beaver was trapped. Tracks were observed however below spillway where one had come up the creek. More cottontail and Jack rabbits are present on the refuge than there have been for a number of years.

E. Predacious Birds, Including Crows, Raven, Magpies.

The first crows appeared on the later part of March and a few have been passing through ever since, but it is believed that less crows migrated through this vicinity than in the past. A number of Golden Eagles have been observed during the winter. The last one seen was on April 30. Less Marsh Hawks have been observed this spring and only a few are using the area at the close of the period. A few Prairie Falcons were present in January and February. A large number of Sparrow Hawks were observed during the first part of April.

F. Fish.

Winter fishing was permitted from December 1 to March 31 and a large number of fishermen used the area when the weather was fit. On January 24 4 cars of fishermen were observed fishing on the lake. The weather was cold and snowing. February 5, 24 cars of fishermen observed fishing on lake. February 26, 25 fishermen, March 5, 24 fishermen, March 12, 12 fishermen, March 19, 22 fishermen were seen on the Lake. On March 31 6 fishermen were observed fishing on the lake and they caught 73 Perch and 3 Crappies.

The principal catch during the season was Perch and a few Crappies were taken during the later part of February and March. A number of Bass were caught and had to be returned to the water. One fisherman caught 6 in two hours. One Wall-eyed Pike was reported caught that measured 18" long. A number of fishermen were checked that had 25 perch each. Only one fisherman was checked that had as many as 15 crappies and he caught these before 8:00 o'clock in the morning.

During the run-off a large number of Blue-gills were observed stranded in grass and brush along creek banks below spillway and some of these fish would possibly weigh up to one pound. The public generally considered the ice fishing as very good and a larger number of fish would have been caught if the winter had not been so severe.

III. REFUGE DEVELOPMENT MAINTENANCE

A. Physical Developments.

The following maintenance and construction projects were completed during the period:

1. Repaired Delco light plant, installed new block assembly, main bearings. Serviced and minor repair on IHC Pickup #I-16949.
2. Took annual waterfowl inventory.

3. Worked on chicken house and barn that was started last period. (80% completed.)
4. Repaired tools.
5. Hauled coal for heating garage and office from local mine and hauled ashes away from headquarters.
6. Filled cracks in down stream spillway walls with tar.
7. Opened refuge roads several times during winter. Refuge road blocked with snow off and on most of the winter.
8. Checked and watched spillway and dam during spring run-off.
9. Removed snow from control culverts and road culverts. Opened channel in snow around island so as to let water into south portion of refuge.
10. Fastened garage and chicken house to foundation that was built last fall.
11. Repaired 40% of refuge boundary fence that was damaged by snow.
12. Made temporary repair to creek crossing on refuge road below dam.
13. Opened septic tank at headquarters. Cleaned tank and built concrete cover for septic tank.

B. Plantings.

No grain crops are to be planted by refuge personnel. The following cooperative farming permits are in effect for the agricultural land on the refuge.

Permit No. 18707	Tom Donohoe	45 acres corn and wheat.
Permit No. 18706	Charles Schollmeyer	85 acres barley and wheat.

One-half of the land under permit to Mr. Donohoe will be seeded and 1/2 summer fallowed. One of the land has been seeded to date. The refuge share will be corn.

One-half of the land under permit to Mr. Schollmeyer will be summer fallowed. None of the land has been seeded to date. Refuge share will be wheat or barley.

IV. ECONOMIC USES.

A. Grazing. None this period.

B. Haying. None this period.

C. Fur Harvest.

A trapping permit was issued to Mr. A. B. Rosendahl of Dunn Center, North Dakota to authorize the taking of Mink, Skunk, Weasel, Coyote, Badger, Muskrat and Beaver. The mink, weasel, muskrat and beaver pelts to be shared on a 50-50 basis and the trapper is allowed to take all the pelts of the other animals. The total take was 4 mink, 60 muskrats, 2 weasel and 1 badger, also 1 beaver. No trapper was done after February 1 due to the snow and cold weather.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Bird Banding. None.

VI. PUBLIC RELATIONS

A. Recreational Uses.

The Lake Ilo Recreational Area, maintained under cooperative agreement by Dunn County, has not been used this period due to the late spring. Trees are to be planted in the new addition that was summer fallowed last year. Other trees are to be cultivated and fence placed around addition.

HIDDENWOOD

I. GENERAL.

The snowfall was above average in this vicinity and the winter was colder than normal. The spring run-off was much later than usual and the lake was covered with snow and ice when visited on March 9 and April 25.

The water level was 20" below spillway at the beginning of the period and was 5" below at the end of the period.

II. WILDLIFE.

A trapping permit was issued to remove mink, skunk, badger, fox and muskrat from the refuge. No report has been received to date.

III. PHYSICAL DEVELOPMENTS.

Birds observed and water level checked. No structures on this area.

LAKE PATRICIA

I. GENERAL.

The snow-fall in this area was above normal through the winter and spring. The refuge was visited once during the period on April 26. The structures were checked. The spillway appeared to be in good condition with the exception of a small amount of riprap that had settled down at the end of north down stream wing wall. The dike appeared to be in good condition with the exception of some wash by wave action on face of dam. Water level on March 26 was approximately 3" above spillway crest. The peak run-off was approximately 16" above spillway crest and this occurred on April 15. The run-off this year was the largest since the area was constructed.

II. WILDLIFE.

Of all the easements visited this spring, this refuge supported the

better migratory bird population, and with a little fresh water from time to time during the summer months it should be an excellent haven for wildlife.

III. PHYSICAL DEVELOPMENTS.

Structures checked and observed wildlife.

LEGION LAKE

I. GENERAL.

The snow-fall was below normal in this area this winter. The ground was partially covered with snow when visited on April 27. The ice level was approximately 15" below spillway crest at the beginning of the period with the peak run-off being 1 foot above spillway crest. The water level on April 27 was 2" above spillway crest.

II. WILDLIFE.

A trapping permit was issued to two local parties to remove fur-bearing animals from the refuge. 48 muskrat and 3 mink were trapped during the season. The area is badly overgrazed and does not provide a maximum amount of food and cover for wildlife.

III. PHYSICAL DEVELOPMENTS.

1. Structures were inspected on March 9, 1950.
2. Cracks in spillway were filled with mastic tar on March 21, 1950.
3. Structures were checked and birds observed on April 27, 1950.

MoLEAN

I. GENERAL.

This area was visited on three dates, March 9 by Mr. Dinkins, March 23 by Messrs. Dougall and Fermanich and on April 25 by Messrs. Fermanich and Lindmeier. The snow-fall was average this period with a late spring and the peak run-off occurred about April 15. The water level was 2" over spillway on April 25.

II. WILDLIFE.

Migratory birds using the refuge on April 25 were few in number, although the lake was free of ice, while this is an excellent shorebird concentration area, only Killdeer were observed on our last visit.

III. PHYSICAL DEVELOPMENTS.

Structures were inspected on March 9 and 23, and on April 25. Repairs to the spillway for which funds are available will be accomplished this spring as soon as roads permit.

PRETTY ROCK

I. GENERAL.

Snowfall was considerably above normal in this vicinity. It was reported that between 70 and 80" of snow was received during this period. The spring run-off was the largest ever recorded in this area and it is believed it was the latest. The water level at the beginning of the period was only a few inches below the spillway crest. The peak run-off occurred on April 15 and the water level was the highest ever recorded since the area was built. The peak run-off reached 4 feet above spillway crest and a small amount flowed over dike but did not cause much damage to the dike. About 4" of water was flowing over the spillway when visited on April 26. The structure was thoroughly inspected on April 26 and a small hole was found in the slope of the spillway in a crack that runs from wall to wall. Some wash below the opening is present but the estimated amount of damage could not be determined on this date due to the amount of water still going over the spillway. Water is entering the hole however and it appeared that a small portion of the bowl below had been forced out to permit the release of this water. Water flowed over the highway on the west end of the area approximately 1 foot deep. Most of the scoria was washed off the surface of the road and deposited on the shoulder rocks. A small amount of additional rock are needed to repair shoulders of road grade.

II. WILDLIFE.

Considering the poor weather to date a fair number of waterfowl were using the refuge. Shorebirds were not present. The ring-necked pheasant population is below normal in this vicinity. It is possible that there was a large winter kill. It is estimated that 30 are using the area this spring.

A trapping permit was issued to a local party. 4 mink were trapped during the season. These were sold by the trapper for \$100.00.

III. PHYSICAL DEVELOPMENT.

1. A channel was shoveled through snow in spillway four times this spring on the following dates - 3/10, 3/24, 4/5 and during run-off 4/15 by the local farmers. The bridge on the highway was also opened on 4/5 by refuge personnel and 4/15 by farmer.
2. Structures were checked on April 27, 1950.
3. Birds observed on April 27.

STEWART LAKE

I. GENERAL.

Precipitation and snowfall was below normal during the first part of the period. The snow-fall was above normal during March and April. The spring run-off was much later than usual this year. The water level was approximately 2 feet below spillway crest at the beginning of the period and remained at this level until the later part of March when the water level raised to 15 inches below spillway crest. The peak run-off occurred on April 15 and the water level reached a height of 34" above spillway crest. This is the highest water level recalled for this refuge. On April 20 approximately 3" of water was flowing over the spillway, and on April 26 a small stream was flowing over the spillway. The area was visited on March 17 and structures were checked. The area was inspected on April 20 and structures were checked. The dam appeared to be in good condition. The spillway was found to have been damaged by the high water during the run-off. This spillway is constructed out of loose rock. These rocks settled on the slope and a portion of the side walls settled also. It is estimated that 300 cu. yds. of rock would be required to repair the spillway.

II. WILDLIFE.

When visited on April 20 the following birds were observed. 2,000 mallards and Pintails, 200 Blue-winged teal, a few shovellers and Scaup, 5 American Mergansers, and 5 sharp-tailed grouse. Very few ring-necked pheasants were observed in this vicinity during the period but it is believed a few are using the area. A few sharp-tailed grouse and Hung. Partridge are using the area.

Two trapping permits were issued to local parties on area. No report received to date on results.

III. PHYSICAL DEVELOPMENTS.

1. Structures inspected on March 7, April 20 and 27, 1950.
2. Birds observed on April 20 and 27.

WHITE LAKE

I. GENERAL.

Precipitation and snowfall was below normal during January and February and above normal during March and April. The spring run-off was very late in this area. The water level was 20" below spillway at the beginning of the period, but had raised during the first part of March and started flowing over the spillway on March 10. When visited on March 17 a small stream was flowing over the spillway.

On April 15 the peak run-off occurred and on this date the water level reached 34" above spillway crest. A small stream was flowing over the spillway on April 27, when last visited.

II. WILDLIFE.

Birds observed on April 20 included 17 Canada Geese, 200 blue-winged teal, 500 pintail, 200 mallards, 12 shovellers and 3 pheasants. Migration has also been poor in this area due to the late cold spring.

A trapping permit was issued to remove fur-bearing animals on this refuge, but due to cold weather none were trapped. It is believed a few mink, muskrat and skunk are using the refuge.

More ring-necked pheasants were observed in this area than last year. It is believed a few pheasant, sharp-tailed grouse and Hungarian Partridge are using the refuge.

III. PHYSICAL DEVELOPMENTS.

1. Structures inspected on 3/17, 4/20 and 4/26.
2. Wildlife observed on 4/20 and 4/26.

W. H. Henshaw

REFUGE MANAGER

WATER FOWL

REFUGE Lake Ilo

MONTHS OF January to April, 1950

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. Swans: Whistling swan									
2. Geese: Canada goose	23	3/4	100	4/6-10	60	4/10			200
Cackling goose									
Brant									
White-fronted goose	None Seen.								
Snow goose	300	4/13	600	4/13-20	200	4/23			800
Blue goose	1	4/13							10
3. Ducks: Mallard	600	1/1	1200	4/6-15	Common				2000
Black Duck									
Gadwall	2	4/20	50	4/20-30					50
Baldpate	75	4/20	150	4/20-30	3				300
Pintail	75	3/28	1200	4/6-20					2000
Green-winged teal	3	4/6	20	4/20-30					20
Blue-winged teal	20	4/13	200	4/21-30					200
Cinnamon teal									
Shoveller	4	4/6	75	4/20-30					100
Wood duck									
Redhead	17	4/20	50	4/20-30					100
Ring-necked duck									
Canvas-back	5	4/20	50	4/20-30					100
Scaup	200	4/6	600	4/20-30					800
Golden-eye	2	4/20	10	4/20-30					10
Buffle-head	3	4/20	15	4/20-30					20
Ruddy duck	20	4/30	40	4/20-30					40
4. Coot:	None seen to date.								

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 6,750Peak waterfowl numbers 4,370Areas used by concentrations Open water areas.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

REFUGE

Hiddenwood

MONTHS OF January

to

April

, 19 50

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. Swans: Whistling swan									
2. Geese: Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose			None observed.						
3. Ducks: Mallard Black Duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck			None observed. Entirely ice bound 4/30/50.						
4. Coot: 3-1750 (June 1949)									

(over)

Form NR-1

SUMMARIES

Total Production:

Geese_____

Ducks_____

Coots_____

Total waterfowl usage during period_____

Peak waterfowl numbers_____

Areas used by concentrations_____

Principal nesting areas this season_____

Reported by_____

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

REFUGE

Lake Patricia

WATERFOWL

MONTHS OF

January

to

April

, 19 50

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan									
2. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose			None observed.						
3. <u>Ducks:</u> Mallard	50	4/28	150	4/28-30					200
Black Duck									
Gadwall									
Baldpate	300	4/28	450	"					500
Pintail	50	4/28	150	"					200
Green-winged teal									
Blue-winged teal	150	4/28	200	"					250
Cinnamon teal									
Shoveller									
Wood duck									
Redhead	140	4/28	175	"					200
Ring-necked duck									
Canvas-back	20	4/28	50	"					75
Scaup	120	4/28	200	"					300
Golden-eye									
Buffle-head	8	4/28	15	"					15
Ruddy duck	16	4/28	16	"					20
4. <u>Coot:</u> 3-1750 (June 1949)	20	4/28	30	4/28-30					50

Form NR-1

(over)

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 1,810Peak waterfowl numbers 1,436Areas used by concentrations Entire water area.

Principal nesting areas this season _____

Reported by Refuge Personnel.

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

REFUGE Legion LakeMONTHS OF January to April, 1950

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan									
2. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose									
			None observed.						
3. <u>Ducks:</u> Mallard	6	4/10	150	4/10-20					300
Black Duck			10	"					20
Gadwall			50	"					50
Baldpate			150	4/10-30					250
Pintail	30	4/10	10	4/20-30					10
Green-winged teal			30	"					50
Blue-winged teal	4	4/20		"					
Cinnamon teal				"					
Shoveller	6	4/20	30	"					30
Wood duck				"					
Redhead			20	"					40
Ring-necked duck				"					
Canvas-back			20	"					40
Scaup	20	4/20	150	"					200
Golden-eye			5	"					10
Buffle-head			5	"					10
Ruddy duck			20	"					20
4. <u>Coot:</u>									

Form NR-1

55

3-1750
(June 1949)

(over)

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 1,080

Peak waterfowl numbers 650

Areas used by concentrations Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

REFUGE

Molokai

WATERFOWL

MONTHS OF January to April, 19 50

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. Swans:									
Whistling swan									
2. Geese:									
Canada goose									
Cackling goose									
Brant									
White-fronted goose			None observed.						
Snow goose									
Blue goose									
3. Ducks:									
Mallard	20	4/11	100	4/11-20					150
Black Duck									
Gadwall	2	4/20	10	4/20-30					10
Baldpate	2	4/20	20	"					20
Pintail	20	4/11	100	4/10-20					150
Green-winged teal			5	4/20-30					5
Blue-winged teal	6	4/20	20	"					20
Cinnamon teal									
Shoveller	2	4/20	20	"					20
Wood duck									
Redhead			10	"					15
Ring-necked duck									
Canvas-back	2	4/20	10	"					15
Scaup	10	4/20	75	"					200
Golden-eye			3	"					6
Buffle-head			3	"					6
Ruddy duck									
4. Coot:	2	4/27	20	4/27-30					

3-1750

(June 1949)

(over)

F30m NR-13

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 647Peak waterfowl numbers 396Areas used by concentrations Entire water area.

Principal nesting areas this season _____

Reported by Refuge Personnel.

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

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WATERFOWL

REFUGE

Pretty Rock

MONTHS OF January to April, 1950

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. Swans:									
Whistling swan									
2. Geese:									
Canada goose	30	4/5	100	4/5-20					150
Cackling goose									
Brant									
White-fronted goose	25	4/5	50	4/5-20					100
Snow goose	50	4/5	75	"					150
Blue goose									
3. Ducks:									
Mallard	20	4/10	500	4/10-20					800
Black Duck									
Gadwall	2	4/20	20	4/20-30					30
Baldpate	10	4/20	100	"					150
Pintail	35	4/20	500	"					800
Green-winged teal									
Blue-winged teal	4	4/20	50	"					100
Cinnamon teal									
Shoveller	5	4/20	50	"					100
Wood duck									
Redhead	2	4/20	25	"					50
Ring-necked duck									
Canvas-back	6	4/20	30	"					50
Scaup	30	4/20	300	"					400
Golden-eye	1		5	"					10
Buffle-head	1		5	"					10
Ruddy duck									
4. Coot:	3	4/20	20	4/20-30					30

3-1750

(June 1949)

Form NR-157

(over)

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 2,080Peak waterfowl numbers 1,830Areas used by concentrations Open water areas.

Principal nesting areas this season _____

Reported by Refuge Personnel.

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

REFUGE Stewart Lake

MONTHS OF January to April, 1950

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. Swans: Whistling swan									
2. Geese:									
Canada goose	30	4/5	200	4/5-20	17	4/20			200
Cackling goose									
Brant									
White-fronted goose	25	4/5	150	4/10-20					150
Snow goose	30	4/5	100	4/10-20					200
Blue goose									
3. Ducks:									
Mallard	800	4/20	1000	4/10-20					1200
Black Duck									
Gadwall			10	4/20-30					20
Baldpate			150	"					200
Pintail	1000	4/20	1000	"					1500
Green-winged teal			10	"					10
Blue-winged teal	200	4/20	200	"					300
Cinnamon teal									
Shoveller	20	4/20	30	"					30
Wood duck									
Redhead			20	"					30
Ring-necked duck				"					
Canvas-back			25	"					30
Scaup	30	4/20	200	"					300
Golden-eye									
Buffle-head									
Ruddy duck									
4. Coot:	10	4/20	25	4/20-30					50

Form NR-1

3-1750
(June 1949)

(over)

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 4,220

Peak waterfowl numbers 3,120

Areas used by concentrations Open water areas.

Principal nesting areas this season _____

Reported by Refuge Personnel.

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

67322

REFUGE White LakeMONTHS OF January to April, 19 50

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. Swans: Whistling swan									
2. Geese: Canada goose	17	4/20	100	4/5-20					100
Cackling goose									
Brant									
White-fronted goose			50	4/5-20					50
Snow goose									
Blue goose									
3. Ducks: Mallard	200	4/20	300	4/20-30					400
Black Duck									
Gadwall			20	4/20-30					20
Baldpate			50	"					75
Pintail	500	4/20	500	"					700
Green-winged teal			10	"					10
Blue-winged teal	200	4/20	200	"					300
Cinnamon teal									
Shoveller	12	4/20	20	"					30
Wood duck									
Redhead			15	"					20
Ring-necked duck									
Canvas-back			15	"					20
Scaup	50	4/20	100	"					150
Golden-eye			5	"					10
Buffle-head			5	"					10
Ruddy duck			20	"					20
4. Coot:	6	4/20	25	4/20-30					25

Form NR-1

3-1750
(June 1949)

(over)

65

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 1,940Peak waterfowl numbers 1,435Areas used by concentrations Open water areas.

Principal nesting areas this season _____

Reported by Refuge Personnel.

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Lake Ilo Months of January to April 1945

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Sandhill Crane	24	4/5	300	4/6-15						600
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer	1	3/24	30	4/20-30						50
Willet	6	4/30	6	4/3						6
Franklin's Gull	75	4/15	200	4/20-30						200
Ring-Billed Gulls	3	4/6	20	4/20-30						50

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	2	4/30			10
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle	3	1/1	8	1/1-2/28	12
Duck hawk	1	4/6	4	4/10-30	
Horned owl	None observed.				
Magpie	3	1/15	7	4/3	20
Raven					
Crow	3	3/24	100	4/1-15	300
Marsh Hawk	1	3/25	5	4/20-30	10
Sparrow Hawk	2	3/27	15	4/5-20	20
Prairie Falcon	1	1/6	4	1/1-2/28	4
Am. Rough-Logged Hawk	2	1/1	6	2/20-3/30	10
Showy Owl	2	1/6	6	1/6-20	12
Reported by <u>Chesley M. Dinkins</u>					

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

UPLAND GAME BIRDS

1613

Refuge District IV Basements, as listed Months of January to April, 1944 50

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
<u>LAKE ILO</u> Pheasant Sharp-tailed Grouse Hung. Partridge			1-M to 2-F		300 10 20	300 Jan., 200 in April.
<u>HIDDENWOOD</u> Pheasant Sharp-tailed Grouse Hung. Partridge					20 20 20	Not observed during spring.
<u>LAKE PATRICIA</u> Pheasant Sharp-tailed Grouse Hung. Partridge					150 20 30	Estimated.
<u>LEGION LAKE</u> Pheasant Sharp-tailed Grouse Hung. Partridge	None seen.				20 20 20	Estimated.
<u>MOLEAN</u> Pheasant Sharp-tailed Grouse Hung. Partridge	None seen.				0 10 20	Estimated.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge District IV Easements, as listed. Months of January to April, 1944 50

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge Pertinent information not specifically requested. List introductions here.
<u>PRETTY ROCK</u> Pheasant Sharp-tailed Grouse Hung. Partridge					30 10 10	Reported by farmer and observed.
<u>STEWART LAKE</u> Pheasant Sharp-tailed Grouse Hung. Partridge			1 M to 3 F		100 100 20	
<u>WHITE LAKE</u> Pheasant Sharp-tailed Grouse Hung. Partridge			1 M to 3 F		10 10 10	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

Refuge District IV Easements as listed.

April 30, 194/ 60

(1) Species	(2) Density	(3) Removals	(4) Disposition of Fur								(5) Total				
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Research	Share Trapping			Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed	Popula- tion
								Permit Number	Trappers' Share	Refuge Share					
Muskrat	Lake Ilo			60				T-300	30	30	29	*	None	None	300
Mink				4					2	2					20
Coyote				1											2
Skunk				1					1						12
Badger				2											3
Weasel				2					1	1					
House Cats				1											
Beaver				1					1	1					2
Cotton Tail Rabbit				1					1	1					20
Jack Rabbit															50
Muskrat	Hiddenwood			60				#43	60						400
Mink				4				8-1400	4						12
Coyote	Estimated furs trapped;														6
Skunk															4
Badger															6
Weasel	Trapping permit issued														10
Jack Rabbit	to local party.														8
Cotton tail															40
Red Fox	One fox and one coyote near refuge.														2

REMARKS: * Furs not sold to date.

1615

53

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i.e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.) Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year. Also show any removals not falling under heading listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market and the total income to the refuge by species, including share-trapped furs and furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS:

Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

Refuge District IV Easements as listed.

April 30, 1950

(1) Species	(2) Density	(3) Removals	(4) Disposition of Fur								(5) Total				
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Research	Share Trapping			Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed	Popula- tion
								Permit Number	Trappers' Share	Refuge Share					
Muskrat	Lake Patricia							None							40
Mink															10
Skunk	Trapping permit was not issued														12
Jack Rabbit	on this refuge.														10
Cotton tail rabbit															20
Mink	Stewart Lake							#44 & 42							8
Weasel	Trapping permits were issued							3-1400							4
Skunk	to local parties. No data on														14
Muskrat	catch to date due to bad roads														50
Cotton Tail rabbit	when visiting refuges.														10
Jack Rabbit															
Muskrat	White Lake							#45-							20
Mink								3-1400							10
Skunk	Trapping permit issued to														8
Cotton Tail Rabbit	local party.														10
Jack Rabbit															10
Muskrat	Pretty Rock							#46-							150
Mink	Permit issued to local party.			4				3-1400	4						15
Weasel															6

REMARKS:

1615

Carl V. Kermanich

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i.e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)
 - (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.) Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
 - (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year. Also show any removals not falling under heading listed.
 - (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market and the total income to the refuge by species, including share-trapped furs and furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
 - (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

SMALL MAMMALS

Refuge District IV Easements as listed. Year ending April 30, 1950

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	Fur Re- stocking	Fur Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
								Permit Number	Trappers Share	Refuge share				
Muskrat	Legion Lake			48				#40 3-1400	48					50
Mink				3					3					6
Weasel	Two 3-1400 trapping permits issued to local parties.													6
House Cat														4
Cotton Tail Rabbit														10
Jack Rabbit														10
Muskrat	MoLean			4				#47- 3-1400	4					50
Mink														5
Skunk	One 3-1400 permit issued to local party.													6
Badger														2
Weasel														4

* List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS:

Reported by Carl V. Fermanich

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
 - (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
 - (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
 - (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
 - (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

EASEMENT REFUGES OF DISTRICT 4aClearwater National Wildlife Refuge:

Heavy snow or soft, muddy roads have not permitted us to make an inspection of this refuge this spring. Lake areas in the immediate vicinity of this refuge have however remained covered with ice and snow through the month of April and it is our belief that few migratory birds have been able to make use of the lake to date.

Shell Lake National Wildlife Refuge.

As in the case of Clearwater, we again have not been able to make an inspection of this refuge. Information obtained from individuals acquainted with the refuge indicate that the lake is partially open and that a few migratory birds have made use of it. Some reposting of refuge signs and markers needs to be accomplished this spring.

Zahl National Wildlife Refuge.

This refuge was inspected on April 4 to determine the amount of run-off waters being received into the refuge and if the Badger damaged dike was receiving any damage from highwater. Snow received in the Zahl area during the winter months was much below normal and as of April 4 little water had entered the lake. The portion of the lake below the highway was filled to only 25% of capacity and this portion of the lake was entirely frozen over at the time of inspection. Little snow remained on the ground, but late April snow may assist to some extent in bringing the level of this lake up to some extent. The dike has received no further damage and repairs to it will be accomplished in the very near future.

At the time of inspection no migratory birds were using the refuge but we do believe the refuge received fair use the later part of April.

REFUGE Clearwater Nat'l Wild Life Refuge

MONTHS OF

Library

to

April

19 50

Form NR-1

4. Coot:

3-1750

(June 1949)

(over)

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period _____

Peak waterfowl numbers _____

Areas used by concentrations _____

Principal nesting areas this season _____

Reported by _____

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

REFUGE Shell Lake

MONTHS OF January to April, 19 50

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan									
2. <u>Geese:</u> Canada goose			150	4/20-21					200
Cackling goose									
Brant									
White-fronted goose			200	4/20-21					250
Snow goose									
Blue goose									
3. <u>Ducks:</u> Mallard			100	4/20-30					150
Black Duck									
Gadwall			10	"					10
Baldpate			15	"					20
Pintail			150	"					200
Green-winged teal									
Blue-winged teal			10	"					20
Cinnamon teal									
Shoveller			20	"					25
Wood duck									
Redhead									
Ring-necked duck									
Canvas-back			30	"					50
Scaup			100	"					150
Golden-eye									
Buffle-head									
Ruddy duck									
4. <u>Coot:</u> 3-1750 (June 1949)			20	"					30

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 1,105

Peak waterfowl numbers 805

Areas used by concentrations Open water areas.

Principal nesting areas this season _____

Reported by Des Laes Refuge Personnel

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since the data are necessarily based on an analysis of the rest of the form.

REFUGE

Lake Zahl

WATERFOWL

MONTHS OF Jan y to April , 19 50

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan									
2. <u>Geese:</u> Canada goose			300	4/20-21					400
Cackling goose									
Brant									
White-fronted goose			350	4/20-21					400
Snow goose									
Blue goose									
3. <u>Ducks:</u> Mallard			150	4/20-30					200
Black Duck									
Gadwall			10	"					15
Baldpate			12	"					20
Pintail			200	"					250
Green-winged teal									
Blue-winged teal			30	"					50
Cinnamon teal									
Shoveller			30	"					50
Wood duck									
Redhead			20	"					30
Ring-necked duck									
Canvas-back			40	"					50
Scaup			160	"					200
Golden-eye			4	"					10
Buffle-head			6	"					10
Ruddy duck									
4. <u>Coot:</u> 3-1750 (June 1949)			50	"					150

Form NR-133

(over)

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 1,835

Peak waterfowl numbers 1,362

Areas used by concentrations Open water areas.

Principal nesting areas this season _____

Reported by Des Lacs Refuge Personnel.

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since the data are necessarily based on an analysis of the rest of the form.

SMALL MAMMALS

Refuge Easements 4a Year ending April 30, 1950

(1) Species	(2) Density	(3) Removals	(4) Disposition of Furs								(5) Total Popula- tion			
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	Fur Re- stocking	Fur Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
								Permit Number	Trappers Share	Refuge share				
<u>Zahl Nat'l Wildlife Refuge:</u>														
Muskrat								3-50	(No report to date on removals.)					100
Mink														25
Skunk														20
Coyote														2
Badger														40
Weasel														5
<u>Shell Lake Nat'l Wildlife Refuge:</u>														
Muskrat								3-49	(No report to date on removals)					30
Mink														15
Skunk														10
Weasel														3
<u>Clearwater Nat'l Wildlife Refuge:</u>														
Muskrat								3-49	(No report to date on removals)					20
Mink														15
Skunk														8
Weasel														2

* List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS:

Reported by Carl V. Fermanich

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
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 - (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
 - (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
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